Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT NO. V-05-005
OWENSBORO GRAIN EDIBLE OILS, INC.
OWENSBORO, KY
MAY 26, 2005
REVIEWER, JOHN EISIMINGER
PLANT I.D. # 21-059-00175
APPLICATION LOG # 50608
AI # 939

SOURCE DESCRIPTION:

Owensboro Grain Edible Oils, Inc. is a refinery which produces table oils, margarine, and other edible fats and oils.

Initial Permit – The initial permit, F-95-003, was issued to the source on August 21, 1995. The source was considered major for SO_2 emissions with emissions of 178.09 tons/year. These emissions were calculated assuming the plant would run fuel oil all year. The log number for this action was D305

Revision 1 – The permit was revised on February 14, 1997. The source accepted a limit on their hexane emissions of 9.5 tons/year so they may avoid Title V permitting requirements. SO_2 emissions were also limited to 95 tons/year. The log number for this action was E672.

Letter 1 – The source was issued a letter on March 21, 1997 for the addition of six new vegetable oil storage tanks. A determination was made that no State regulations applied to these tanks. Therefore, a No Permit Required letter was sent to the source. The log number for this action is F133.

Letter 2 – The source was issued a letter on April 7, 1997 for the addition of a nitrogen generating unit. A determination was made that no State regulations applied to these tanks. Therefore, a No Permit Required letter was sent to the source. The log number for this action is I1213.

Letter 3 – The source was issued a letter on June 5, 1997 for the addition of four new vegetable oil storage tanks. A determination was made that no State regulations applied to these tanks. Therefore, a No Permit Required letter was sent to the source. The log number for this action is I1249.

Letter 4 – The source was issued a letter on June 19, 2000 for the addition of three new vegetable oil storage tanks. A determination was made that no State regulations applied to these tanks. Therefore, a No Permit Required letter was sent to the source. The log number for this action is I1960.

COMMENTS

Type of control and efficiency

The controls implemented at the source are considered adequate to sufficiently control emissions. The assumed efficiencies for particulate emission controls are 90% for the paved haul road and yard area, and 70% for the unpaved haul road and yard area. The bleaching clay silo is controlled by a baghouse with a control efficiency of 99%.

Emission factors and their source

AP-42
MSDS
Manufacturer's guarantees

Applicable regulations

401 KAR 52:020, Title V Permits, applies to the source because the source emits more than 10 tons/year of a single HAP. (Hexane)

The bleaching clay storage silo is subject to 401 KAR 59:010, New process operations, because construction of the silo commenced after July 2, 1975.

The paved and unpaved haul road and yard areas are subject to 401 KAR 63:010, Fugitive emissions.

The two # 2 fuel oil storage tanks are subject to 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels.

The Cleaver Brooks boiler is subject to 40 CFR 60 Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating units, and 401 KAR 59:015, New indirect heat exchangers.

The two Geka boilers are subject to 401 KAR 59:015, New indirect heat exchangers.

The refining/bleaching, hydrogenation (2), deodorization (2), soap stock filter storage, and hot well are subject to 401 KAR 63:020, Potentially hazardous matter or toxic substances. The Hexane PRG limit is 200 micrograms per cubic meter. As specified in the permit, the owner or operator must demonstrate through modeling that the capture efficiency at the hot well will be at least 12% continuously. This will allow the source to be below the PRG limit for Hexane.

EMISSION AND OPERATING CAPS DESCRIPTION:

The bleaching clay silo is limited by 401 KAR 59:010, New process operations, applicable on or after July 2, 1975. Opacity and mass emission limits result from the application of this regulation. As a result, the bleaching clay silo will be required to use a filter and be operated and maintained in accordance with the manufacturer's recommendations.

EMISSION AND OPERATING CAPS DESCRIPTION: (CONTINUED)

The paved and unpaved haul road and yard areas are subject to the requirements of 401 KAR 63:010, Fugitive emissions. These emission points will be controlled by utilizing wet suppression, enclosures, and/or dust collection equipment so as to keep particulate emissions from crossing the lot line of the property.

The source has been limited to processing no more than 90,000 pounds/hour of soybean oil. Hourly records to demonstrate compliance with the soybean oil production limitation shall be maintained on an hourly basis. There are also emission limitations required by 40 CFR 60, Subpart Dc and 401 KAR 59:015, as outlined below.

40 CFR 60, Subpart Dc limits the source to using # 2 fuel oil that contains no more than 0.5 weight percent sulfur. This can be demonstrated through fuel supplier certification. 401 KAR 59:015 limits the source to a particulate emission rate of no more than 0.34 lbs/mmBtu and an opacity of no more than 20% except for the listed exceptions. Compliance with these limits can be demonstrated by calculations and a Method 9 determination, respectively.

The three boilers, the Cleaver Brooks and the two Geka Boilers, are limited to burning a total of 2,500,000 gallons of fuel oil per year. This number comes from the application filed by the source on form DEP 7007J. The two storage tanks have a limit of 1,250,000 gallons per year, each. In a letter dated July 10, 2003, the source requested a limit of 2,641,000 gallons per year. The limit of 2,641,000 gallons per year was listed in the previous permit. The limit was left at 2,500,000 gallons per year based on information in the application.

401 KAR 63:020 limits the refining/bleaching, hydrogenation (2), deodorization (2), soap stock filter storage, and hot well to emitting potentially hazardous matter or toxic substances in such quantities or duration as to not be harmful to the health and welfare of humans, animals and plants. The PRG limit for Hexane is 200 micrograms per cubic meter. Assuming 100% of the Hexane is emitted and a capture efficiency at the hot well of 12%, the Hexane ambient concentration at or beyond the fence line is 198.056 micrograms per cubic meter. Therefore, the source is required to maintain a capture efficiency of at least 12% at the hot well.

PERIODIC MONITORING:

Given the control device used (filter) at the bleaching clay storage silo, there is little chance of violating a mass or opacity standard. For this reason, direct measurement of mass and opacity emissions will not be required but some assurance that the filters are working properly will be needed. Visual inspection of the filters, proper maintenance, and records of maintenance and the dates this maintenance occurred are sufficient to assure the filters are working properly.

Only record keeping is required to demonstrate compliance with the applicable limitations in the permit.

OPERATIONAL FLEXIBILITY:

The source has been limited to burning no more than 2,500,000 gallons of # 2 fuel oil per year. Monthly records to demonstrate compliance with the fuel oil limitation shall be maintained monthly and on a 12 month rolling total.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.